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**Stress on the Force: Measuring the Impact of Increased  
Operational Deployments Using Manpower Metrics**

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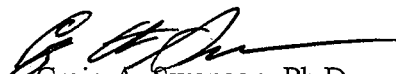
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## EXECUTIVE SUMMARY

**Title:** Stress on the Force: Measuring the Impact of Increased Operational Deployments Using Manpower Metrics

**Author:** Major Robert Guice, United States Marine Corps

**Thesis:** Accurate deployment data, when correlated with manpower metrics such as divorce, separation, and suicide rates, can provide a representative assessment of “stress on the force.”

**Discussion:** The United States Marine Corps (USMC) is involved in a conflict that can potentially last a generation. Given this level of operational commitments, the Marine Corps is sensitive to the ramifications, both long and short term, of increased operational tempo. The negative ramifications are commonly referred to as “stress on the force” and can cross most functional boundaries of the Marine Corps. Recognizing and addressing the stress is a challenge for a service that is involved in one of the longest periods of sustained combat of its illustrious history. Identification of measurable stress indicators may facilitate the Marine Corps in maintaining the proper balance between operational deployments and the quality of life of service members and their families. The paper looks at the issues surrounding the measurement of deployment tempo by the Marine Corps Total Force System (MCTFS). The paper then provides several manpower metrics that can be used as “stress indicators”. Finally, the paper will draw a series of conclusions and provide recommendations for improving the Marine Corps’ ability to track the health of the force from a manpower perspective.

**Conclusion:** The Marine Corps has the capability to depict the “stress on the force” in near-real time. The breadth of data stored by the MCTFS can be effectively mined via access to the relational database that stores the information. Facilitating the use of manpower metric to measure stress of the force will require renewed focus on improving the data itself.

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### **DISCLAIMER**

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*"The United States is a nation engaged in what will be a long war. Since the attacks of September 11, 2001, our Nation has fought a global war against violent extremists who use terrorism as their weapon of choice, and who seek to destroy our free way of life."*

*2006 Quadrennial Defense Review*

## **Introduction**

The United States Marine Corps (USMC) is involved in a conflict that can potentially last a generation. Today, over 28,000 Marines are deployed in Iraq, Afghanistan, and elsewhere in the Central Command area of operation.<sup>1</sup> Many of these Marines are directly engaged in combat operations. An additional 6,000 Marines are deployed worldwide in support of other combatant commanders. Given this level of operational commitments, the Marine Corps is sensitive to the ramifications, both long and short term, of increased operational tempo.

The Marine Corps now finds itself struggling to support both wartime demands and an expanding end-strength. Commonly referred to as "stress on the force" these demands cross most functional boundaries of the Marine Corps. Recognizing and addressing these realities is a challenge for a service that is involved in one of the longest periods of sustained combat of its illustrious history. While equipment and facility issues justly deserve the attention of senior leadership during time of war, the primary concern of the service will always be the potential impact on individual Marines.

Marines are resilient warriors and are willing and able to absorb increased deployment stress with few outward symptoms. However, any deployment may cause financial, emotional, physical or mental stress as members are away from their families and in dangerous

environments.<sup>2</sup> Identification of measurable stress indicators may facilitate the Marine Corps in maintaining the proper balance between operational deployments and the quality of life of service members and their families. This research attempts to aid in this effort by asking the following question:

***Which manpower metrics are available to depict  
“stress on the force” caused by increased operational deployments?***

Development of effective metrics to depict the health of the force offers several significant benefits. The identification of stress indicators from manpower metrics offers the possibility of conditional forecasting and trend analysis regarding operational deployments. Both statistical analysis methods can assist in identifying at which point the increased levels of deployments have an adverse effect on the service. These adverse effects may include discipline issues, poor retention rates, and mental health concerns. Decisions regarding resources, force provision, and human services can then be made on quantitative analysis vice intuition or anecdotal evidence.

## **Thesis**

Accurate deployment data, when correlated with manpower metrics such as divorce, separation, and suicide rates, can provide a representative assessment of “stress on the force.” This research highlights the issues surrounding these stress indicators and provides recommendations for improving their utility. The intent of this research is to provide better understanding of the quantitative evidence for tracking and analyzing the effect of an increased deployment tempo.



## **Methodology**

The research concentrates on the Marine Corps, although most of the issues and recommendations are relevant throughout the Department of Defense (DoD) services. The scope is limited to unclassified manpower related issues, systems, and metrics. The research frames the current strategic environment by looking at the recent operational tempo in comparison to the last 40 years. The paper looks at the issues surrounding the measurement of deployment tempo by the Marine Corps Total Force System (MCTFS). The paper then provides several manpower metrics that can be used as “stress indicators”. Finally, the paper will draw a series of conclusions and provide recommendations for improving the Marine Corps’ ability to track the health of the force from a manpower perspective.

*"There is stress on the individual Marines that is increasing, and there is stress on the institution to do what we are required to do, pretty much by law, for the nation"*

*Gen James T. Conway, 34<sup>th</sup> Commandant of the United States Marine Corps<sup>3</sup>*

## **USMC Deployments**

Expeditionary in nature, the Marine Corps has traditionally maintained a forward deployed character. This was accomplished through overseas bases (i.e., Japan and Hawaii), the unit deployment program (UDP)<sup>4</sup>, and Marine Expeditionary Unit (MEU) deployments.<sup>5</sup> Post-Vietnam-era Marines, especially those serving in the operating forces, were accustomed to the relatively consistent character of Marine Corps deployments. Typically, a Marine in the operating forces could expect to deploy for six to seven months followed by at least a year back at their home station. The time spent post deployment at home station is commonly referred to as "dwell time." The 1:2 ratio of deployment to dwell remained consistent from the late 1970's until 2001.

The 1:2 ratio provided Marines and their families with fairly predictable and realistic expectations regarding the amount of time spent away from home. Despite this period of relative deployment stability, the post cold war environment brought an increasing frequency of smaller scale operations and peacekeeping missions (e.g., Kosovo, Bosnia, Somalia, and Haiti). This fact drew the attention of leaders in Congress and was the reason for the introduction of legislation to deter the excessive deployment of service members.<sup>6</sup>

## **Changing Environment**

The end of the cold war began the evolution of a new security environment that would result in new operating realities for the U.S. military. The fall of the Berlin Wall initiated an era

of force downsizing, smaller defense budgets, and a diminished presence overseas for military personnel. Despite these new realities, the U.S. military was continuing to deploy its forces for traditional combat training and simultaneously trying to manage the increased demands to deploy forces for peace operations and other activities.<sup>7</sup> Congress took action in 1999 with the passage of the FY2000 National Defense Authorization Act (NDAA) by mandating DoD to be proactive in tracking the deployment rates. The NDAA charged the services to measure service member deployments by tracking an individual personnel tempo (PERSTEMPO).<sup>8</sup>

PERSTEMPO is the accumulation of days that a service-member spends on official duty away from home. In an effort to deter the military from over taxing service-members, the legislation required each service to report the number of deployed days for each service-member. Service-members deployed over 400 days in a two-year period would be paid \$100 per day in excess as compensation.<sup>9</sup>

## **The Long War**

Congress hoped to encourage DoD to be judicious in discretionary operational commitments in order to lessen the negative impact on service-members' quality of life. Unforeseen in the enactment of the PERSTEMPO legislation was the potential of a global conflict that would demand a sustained level of operational commitments not seen since Vietnam.

The Global War on Terror, or Long War, can be described as the kind of struggle that might last decades as allies work to root out Islamic extremists across the globe. Today the Marine Corps maintains approximately 40,000 active-component military personnel overseas – either stationed or operationally deployed. In addition, there are more than 4,000 Reserve

personnel abroad. As of the spring of 2008, more than 23,000 are operationally deployed in or around Iraq, Afghanistan, and elsewhere.

## **Summary**

The occupation of Iraq, a major ongoing operation in Afghanistan, homeland security missions in the continental United States, and peacekeeping efforts around the globe will likely keep the Marine Corps operationally committed for the near future. Balancing the force and ensuring its readiness to support both the “Long War” and future contingencies is the primary concern of the respective Service Chiefs. Despite security gains in Iraq, there is still a significant risk that the strained U.S. Military cannot quickly and fully respond to another outbreak elsewhere in the world.<sup>10</sup> The responsibility to address these issues from a personnel perspective falls under the purview of the Marine Corps’ department that oversees its human resource development process.

## Manpower

The tracking of deployment information for the Marine Corps falls under the cognizance of its personnel division. Personnel management of the Marine Corps is the responsibility of Manpower and Reserve Affairs (M&RA), the largest department within Headquarters, Marine Corps. M&RA's responsibilities as part of the human resource development process include:

- retention
- distribution
- appointment
- evaluation
- awards
- maintaining service records
- promotion
- retirement
- family support
- discharge
- separation

In terms of scope, M&RA oversees management of commissioned officers, warrant officers, and enlisted personnel of the Marine Corps and Marine Corps Reserves. The information system that ties all of these functions together is the Marine Corps Total Force System (MCTFS).<sup>11</sup>

MCTFS is the single, integrated, personnel and pay system supporting both Active Duty and Reserve components of the Marine Corps. MCTFS maintains more than 500,000 records that are available to be processed for pay purposes, personnel management, or for the production of necessary management reports. The data collection of MCTFS is based on the principle of singular reporting. Whenever practical, an event is reported when and where it occurs to ensure accuracy and timeliness of reporting.<sup>12</sup> An item of information is entered into the system only once; thereafter, only changes, deletions, or corrections to this information are reported. The data is subsequently stored in a relational database<sup>13</sup> for ease of access and integration with other information management systems.

## **Breadth of Data**

MCTFS stores millions of rows of data on Marines within database tables. The vast scope of the human resource development process (HRDP) offers plenty of potential indicators to measure operational stress. Everything from promotion dates, dependent information, awards received, to education levels have fields and within corresponding tables dedicated to storing this information. The authoritative data that MCTFS provides via an accessible relational database offers the potential for near real-time decision support metrics regarding any number of manpower related issues<sup>14</sup>.

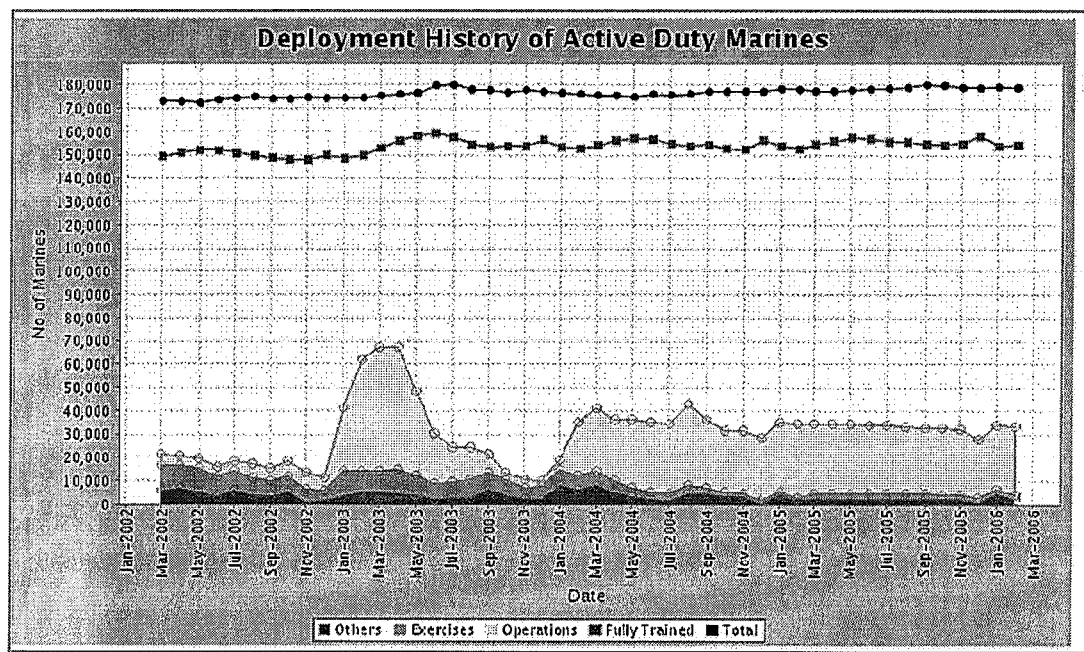
## **Summary**

The Marines Corps' decision to increase its end-strength requires a renewed focus on ensuring the force does not reach its breaking point or cause long-term damage to service-members and their families. The Marine Corps has the advantage over its sister services because has the only combined pay and personnel system within DoD. In terms of both reliability and accuracy of data, none of the other services has the capability of the Marine Corps to quickly access and mine manpower data. This offers Marine Corps leaders accuracy and timely indicators of potential manpower metrics to measure the health of the force using quantitative data vice antidotal evidence.

## Metrics

Metrics that can relate the potential cause (e.g., deployment tempo, number of deployments, deployment length) and effect (e.g., retention, discipline problems, suicide rates) relationship is central to the discussion of 'stress on the force'. The use of conditional forecasting and other statistical analysis has little utility without metrics to depict these relationships. This section examines the measurement of deployment rates and offers potential manpower metrics capable of depicting the effects of increased deployment tempo.

Figure 1 Deployments of Active Component Marines Since March 2002



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## RTEMPO

In accordance with the FY2000 NDAA legislation, the Marine Corps has tracked PERTEMPO within MCTFS<sup>15</sup> since October 1999. Based on the previously mentioned singular

reporting framework, when a Marine is deployed, their deployment period is captured in MCTFS with a start date and type of deployment. The deployment types fall into the following three categories: operations, exercises, and other official duty related travel. The PERSTEMPO record remains opened until a transaction is entered, ending the deployment period.

PERTEMPO, commonly called deployment tempo or DEPTTEMPO, measures the total number of deployed days within a two-year rolling window. For instance, a Marine who has deployed twice over the past two years, once for six months and once for three months, would have a total of 270 deployed days. This would equate to a ratio of 270:730 or a 1:3 ratio. Marines DEPTTEMPO rates are categorized into four distinct bins: 1:1 (equates to 1-181 days not deployed during the past two years), 1:2 (182-242 days), 1:3 (243-364 days), better than 1:3 (365+ days). DEPTTEMPO ratios have become the standard of measuring deployment levels across the services since 2002.

DEPTTEMPO captures administrative type deployments that typically are not very stressful for the service-member. For example, a Marine may have a DEPTTEMPO ratio of 1:3 based on countless TAD trips in support of his specific billet. Another Marine may also have a 1:3 DEPTTEMPO ratio based on two operational deployments to Iraq and Afghanistan respectively. While Marines have the same number of deployed days, the character and potential effects of their time away from home is not captured by solely looking at the resulting DEPTTEMPO ratio.

DEPTTEMPO has overall been an effective metric in depicting Marine Corps' deployment picture. Appendix A depicts the most recent DEPTTEMPO history for infantry Marines. However, the numbers and charts can be a bit misleading because DEPTTEMPO is a simple accumulation of days deployed. DEPTTEMPO fails to portray the nature of the deployment



unless additional manipulation of the data is conducted (i.e., only count DEPTempo records in which the category of the deployment is operations, thereby excluding typical administrative type deployments). To give granularity to the issue of the deployment stress, it is often more effective to address the number of actual combat related deployments.

## **Deployments**

Surprisingly, calculating the number of deployments for Marines is a difficult task within MCTFS. This is because MCTFS does not include a transaction that simply captures the start and stop date of a deployment. Additionally, several of the fields that could correlate to deployments are notoriously unreliable or difficult to analyze. Despite the difficulty in calculating deployment data, its calculation can still be achieved by analyzing more reliable fields stored within MCTFS.

The administrative procedures followed when Marines go on deployment results in transactions and database entries that can be analyzed to present the deployment picture of the service. Marines have a 'crisis code'<sup>16</sup> and start date entered into the system to signify the beginning of support for the "Long War." When combined with PERTEMPO data (to ensure the Marines were involved in operations), individual location codes (to separate Marines who are deployed overseas from those who support operations from the U.S.), and the "crisis code" (to signify support of the "Long War") one can come up with a reasonable way to determine both the location, and duration of a deployment.<sup>17</sup>

The difficulty in determining deployments at the macro level has several implications. First, the more complex it is to calculate deployments service wide means an increase in errors for the reporting of the information. Additionally, the database expertise necessary to calculate

this information is unlikely to be found at the lower echelons of command within the service.

Finally, recent emphasis to return to a 1:2 deployment to dwell ratio requires accurate summaries of crisis deployments. Without a systematic and uniform method to calculate deployments, the Marine Corps will have to rely on manual entry (i.e., more error prone) in order to promulgate this information within manpower IT systems.

## Dwell Time

A Marine's dwell time begins after a Marine returns to home station after a deployment. While MCTFS does not track this information currently, it could. Using the logic described above, the Marine could have a dwell date based on the previous deployment end date. The number of days of the Marines previous deployment added to the date that the deployment ended would provide a dwell date.

*dwell date =*

*(length of previous deployment) \* deployment factor + previous deployment end date*

*where deployment factor is the desired dwell ratio (e.g., df = 1 for a 1:1 ratio, df*  
*= 2 for a 1:2 ratio, ect)*

The fact that MCTFS does not track dwell time poses several problems for the service. As already mentioned, the Commandant of the Marine Corps has called for renewed emphasis on returning to a 1:2 dwell ratio. A return to a 1:2 dwell ratio was the primary rationale for the end strength increase.<sup>18</sup> Second, the service announced in August 2007 a compensation program that

would provide additional administrative leave for Marines who “broke” dwell time for a subsequent deployment.<sup>19</sup>

Measuring the deployment tempo and dwell is central to the discussion of measuring “stress on the force.” Discovery of the cause (i.e., operational stress) and effect relationship requires the independent variable (deployments) of the equation to be accurately measured. The fact that extensive data cleansing is required to calculate something as simple as the deployment length of a Marine highlights one of the biggest challenges in correlating ‘stress on the force’ with deployment data. Only through the combination of several select fields within MCTFS can one depict accurate data describing an individual’s deployment information. This reality makes the determination of “number of deployments,” “length of deployment,” and “dwell time” a complex data mining and cleaning effort prone to errors at the macro level. It also undercuts the utility of using DEPTempo data to measure ‘stress on the force’.

## **Measuring Effects**

As noted in the previous section, the measurement of deployment information has both strengths and weaknesses in terms of reliability and accuracy. This characteristic also holds true for the metrics that could potentially depict the effects of “stress on the force”. The following is a brief survey of the ‘effects-type’ metrics that could assist in depicting the complete cause and effect relationship.

## **Retention**

The Marine Corps relies less on retention than the other services. This bears out in the fact that the service has a 30 percent attrition rate every 36 months. Having a larger number of combat related fields, greater deployment frequency, and fewer technical jobs contribute to the

Marine Corps tendency to maintain a younger overall force. Maintaining a younger force has allowed the service to emphasize recruitment vice retention for reaching its authorized end-strength.

This calculus will need to shift slightly in the upcoming years in order to meet the service's end-strength goals<sup>20</sup>. While the Marine Corps has met its retention goals for the past 15 years, the service will need to continue this trend as competition for recruits becomes more intense and the pressure increasing the size of the force to 202,000 mounts. Beyond total numbers, the Marine Corps will need to remain sensitive to the potential of losing experienced combat leaders who chose to separate from the service due to seemingly continuous deployment cycles. Gaining visibility on this relationship will require effectively looking at the relationship between deployments, dwell, and separation codes stored within MCTFS.

MCTFS tracks separation from the Marine Corps with a 'separation status code' that categorizes the reason for leaving the service. The separation codes relate to a wide spectrum of reasons from leaving the service (e.g. end of obligated service, retirement, drug abuse, mental incapacity, etc). Relating separation codes to deployment frequency would be an effective 'stress indicator' for several reasons. This information assists in focusing retention efforts by targeting monetary incentive benefits to the most heavily deployed Marines or Marines with critical military occupational specialties (MOS). This information would also highlight trends with respect to separation and deployment rates. Such evidence could more effectively frame the Marine Corps' decision to keep 6-7 month deployment periods instead of the 15-month deployment lengths of the Army.

## **Suicide Rates**

Tracked by the Manpower Personnel Readiness division of Manpower, suicide rates are perhaps the most telling of stress indicators. Information regarding suicides is not stored within MCTFS directly. The Suicide Tracking and Report Tool is a web-based application used by the functional managers of the Marine Corps suicide awareness program. However, the information within this application regarding probable and confirmed suicides could be tied to MCTFS deployment information with relative ease.

Suicide rates within the military are about half those in the U.S. military-aged population. Due to the very small number of suicides within the Marine Corps each year, the data would likely be more effective if examined at the macro, or service wide level. The trends could then be depicted by:

- comparing to historical service suicide rates
- comparing to national suicide averages
- normalizing to present a uniform number across time (e.g., suicides per 100,000 people)

Presenting the information in this manner may assist in drawing if a correlation exists between crisis deployments and suicide rates. Suicide as a “stress indicator” could be effective by depicting rates based on the highest deployed Marines, marital status, number of crisis deployments, or DEPTempo rate.

## **Desertions**

Determining an exact figure for desertion, which is sometimes confused with going absent without leave, or AWOL, can be challenging and subject to misrepresentation. The military defines AWOL as taking an unauthorized leave for 30 days or less. Desertion, which involves those who have left their posts for more than 30 days, is generally treated more

seriously than AWOL offenses. AWOL and desertion figures can fluctuate over short periods as some offenders are rounded up, turn themselves in, or are allowed to return their units with little or no disciplinary action taken against them.<sup>21</sup>

Due to the particulars of desertion and AWOL status, its use as a 'stress indicator' is limited. MCTFS captures desertion and AWOL incidents by a transaction depicting the duty status of a Marine. When a Marine is in or out of a desertion or AWOL status, an administrative transaction is made to depict the change in status. These trends are difficult to analyze because the data may extend over long periods and fluctuate greatly over a short period. For instance, the Marine Corps measures the number of Marines currently in a desertion status. This is depicted by showing the number of Marines who entered in a deserter status and the number of Marines that carry over from the previous year as being a deserter. Overall, these nuances make desertion and AWOL status not as effective as a stress indicator based on the current manner in which these metrics are captured within MCTFS.

### Divorces Rates

	2002		2003		2004		2005		2006	
	Deployed	Never Deployed	Deployed	Never Deployed	Deployed	Never Deployed	Deployed	Never Deployed	Deployed	Never Deployed
Enlisted	3.5%	3.5%	2.6%	3.4%	3.3%	3.7%	3.1%	3.4%	3.4%	3.5%
Officer	2.4%	1.8%	1.6%	1.7%	1.8%	1.5%	1.5%	1.7%	1.7%	1.8%
Total	3.3%	3.2%	2.5%	3.1%	3.1%	3.3%	2.8%	3.2%	3.1%	3.2%

Table 1 USMC Divorce Rates

The Marine Corps recruits Marines and seeks to retain families. As with each of the services, the Marine Corps has a significant interest in supporting its service members' families during times of separation due to operational commitments. As the Marine Corps operational deployment rates increase, it has maintained a remarkably stable divorce rates among service members. The number of active-duty Marines getting divorced has remained constant, despite deployments to Afghanistan and Iraq.

Measurements of divorce rates are captured in MCTFS on an as required basis. For example, if a Marine enters service, his marital status is recorded in an MCTFS transaction. Should the Marine's marital status change during the year, a new entry is made in his or her personnel record to capture the event. However, Marines reporting of changes to Marital status is notoriously unreliable. For the most part, the marital status is only captured during the typical annual audits of personnel records. Hence, if a Marine is married at the beginning of the year, divorces, and remarries without reporting it between audits, the event will not be captured.

In order to capture the effects of deployment stress, specifically with respect to divorce rate, it should be presented in the following manner: First, is the fact that divorce rates have to be measured against historical and national rates. Next, the information should be presented relative to those who have deployed to those that have not. (see Table 1) Divorces that occur within one year after of a deployment could effectively measure the impact of crisis deployments. Granted, the divorce may be the result of a completely unrelated issue, but at the macro level, such information could be useful to supplement other stress indicators.

## **Family Separation**

Family Separation Allowance (FSA)<sup>22</sup> is payable only to Marines with dependents when the military member is forced to be away from his/her dependents for longer than 30 days, due to military orders. FSA as a 'stress indicator' has several inherent advantages. First, the data capturing FSA extends back to 1999 vice only 2001 for PERSTEMPO. FSA provides supplemental data to deployment time that allows for a greater time series for trend analysis. FSA also provides visibility on Marines stationed overseas who are not accruing DEPTempo days because they are not considered deployed. Sometimes called 'geo-bachelorhood,' this situation occurs when married Marines, preferring not to accept accompanied orders overseas,<sup>23</sup> accept a 1-2 year unaccompanied tour. Because this is considered a change in duty station and not a deployment (although they are technically forward deployed) the individual will not accrue DEPTempo time.<sup>24</sup>

FSA rates from the Marine Corps for the past seven years follow the same trends as PERSTEMPO (i.e., a spike of recipients during OIF and sustain rates since 2004). However, since the information may include non-crisis deployment related events (i.e. TAD in excess of 30 days in CONUS), the potential exists for the numbers to be less accurate. FSA data could be correlated with Marines who receive FSA while receiving the 'combat tax zone exclusion.'

## **Conclusion**

The September 11, 2001 terrorist attacks marked the beginning of what could be a generational conflict akin to the Cold War. Whether increased levels of PERSTEMPO adversely affect the retention of Marines, to what extent, and whether the deployment rates are sustainable will be one of the most important questions posed to senior service leaders during the Long War. By focusing on Manpower related issues, senior leaders of our volunteer force can address the



human impact of sustained deployment rates not seen since the Vietnam War. There is a need to monitor the impact on its career force, especially the officers and the staff non-commissioned officers (SNCO) in the 8 to 12 year range. These Marines are critical to the service's ability to operate in environments that stress small unit leadership and decentralized command and control (e.g., distributed operations, counter-insurgency operations, peace keeping and peace enforcement operations). Retaining this cadre of seasoned junior officers and NCOs makes it more imperative to develop metrics to assist in balancing operational tempo and service member's quality of life.

## **Recommendations**

The Marine Corps, which owns the only integrated, pay, and personnel system within DoD, has the capability to depict the "stress on the force" in near-real time. The breadth of data stored by the MCTFS can be effectively mined via access to the relational database that stores the information. Facilitating the use of manpower metric to measure stress of the force will require renewed focus on improving the data itself. However, the utility of Manpower metrics as stress indicators begins and ends with accurate and reliable information depicting the deployment data for the force. The following are several recommendations with respect to the data collection that would improve the accuracy and reliability of deployment related information within MCTFS.

## **Audits**

The most effective way to improve the accuracy of the deployment data for Marines is to conduct a post-deployment deployment audit for returning Marines. This audit could be

modeled using the same procedures used for post-deployment health assessments or those conducted to settle a travel claim after a government travel. The post-deployment audit would ensure the correct summary of the deployment period is entered into a Marine travel record (i.e., start date, ending date, type of deployment, locations, reason for ending deployment, leave periods, etc).

Each of the services acknowledges that deployment information can be captured more effectively than the current methods. Much of this can be attributed to the fact that current personnel post-deployment practices do not emphasize ensuring the accuracy of PERSTEMPO information. The importance of the accuracy of this data has to be stressed by HQMC via all Marine messages and training initiatives. Currently, the data still lacks the reliability necessary considering its importance. This is especially important considering that this information can be used, and is used, for force deployment and assignment decisions, decisions that have a profound impact on the “stress of the force.”

### **Fidelity of Deployment Codes**

Complementing the recommendation to improve the accuracy and reliability of stress indicators is a need to depict the deployment codes with more fidelity. The current method that MCTFS uses to capture a deployment data requires the manipulation/joining of dozens of tables. Understanding the nuances with the integrity of the multiple data fields and the rules in calculating a deployment period requires expensive database expertise, expertise that more often than not is not located below the headquarters level. This fact causes frustration at lower levels of command within the Marine Corps and increases the probability of errors due to the complexity of the data cleansing and manipulation.

What is needed is the development of a single "deployment summary" table that includes the granularity needed to conduct simple, ad-hoc analysis. In addition to the DEPTempo codes depicting the type of deployment, this table could include fields that show the following:

1. Location of the deployment (CONUS and OCONUS)
2. Deployment character (e.g. UDP, MEU, Training Team, unit deployment, individual augment, ect)
3. Reason the deployment ended (e.g. Scheduled rotation, discipline, killed in action, wounded in action, emergency leave, annual leave, etc.)
4. Deployment start and end dates

## **Summary**

This research demonstrates that the Marine Corps manpower system, MCTFS, has the requisite data fields to assist in depicting the "stress on the force". While adjustments need to be made to improve the effectiveness of these metrics, overall they constitute a good point of departure in the analysis of the impact of the increased level of operational commitments. Stress indicators such as divorce, separation, and suicide rates in concert with deployment data can provide a representative assessment of "stress on the force" based on quantitative vice antidotal evidence. Current attempts to use manpower metrics in measuring "stress on the force" are important points of departure, but they will always be hampered by unreliable and ambiguous deployment data. The recommendations offered in this research address this issue by introducing a technical and systematic solution to improve the accuracy and fidelity of the data.

# Notes

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<sup>1</sup> Central Commands area of responsibility is in the Middle East, East Africa and Central Asia.

<sup>2</sup> Coleman, Ronald. "Statement of Lieutenant General Ronald S. Coleman Before the Senate Armed Services Committee." United States Senate. March 27, 2007. <http://armed-services.senate.gov/statemnt/2007/March/Coleman%2003-28-07.pdf> (accessed January 24, 2008).

<sup>3</sup> Conway, James. "ALMAR 008-07 Marine Corps End Strength Increase." *United States Marine Corps*. February 6, 2007.

<http://www.usmc.mil/almar/almar2000.nsf/52f4f5d11f10b4c4852569b8006a3e35/23954b943259c6168525727a00744719?OpenDocument> (accessed January 25, 2008).

<sup>4</sup> The UDP began in 1977 to reduce personnel turbulence and increase combat readiness of Marine Forces, Pacific (MARFORPAC) units. Select units would deploy every 18 months from CONUS to Japan for a 6-month period.

<sup>5</sup> Following a six-month training work-up, a MEU deploys for six months in support of geographic combatant commanders. During this time, the MEU is a forward-deployed, self-sustaining force that combatant commanders can direct to accomplish a variety of special operations and conventional missions.

<sup>6</sup> United States General Accounting Office. *Military Readiness: A Clear Policy Is Needed to Guide Management of Frequently Deployed Units*. Report to Congressional Requesters, Washington, D.C.: GAO, 1996.

<sup>7</sup> (United States General Accounting Office 1996)

<sup>8</sup> Pub. L. No. 106-65, §923 (1999) defined personnel tempo as "the amount of time members of the armed forces are engaged in their official duties, at a location or under circumstances that make it infeasible for a member to spend off-duty time in the housing in which the member resides when on garrison duty at the member's permanent duty station." This is codified in 10 U.S.C. §487.

<sup>9</sup> The September 11 attacks and subsequent operations in Afghanistan and Iraq would cause the payments of for over deployed service members to be suspended.

<sup>10</sup> Baldor, Lolita C. "War Demands Strain US Military Readiness." *Washington Post*. February 08, 2008. <http://www.washingtonpost.com/wp-dyn/content/article/2008/02/08/AR2008020803292.html> (accessed February 20, 2008).

<sup>11</sup> The MCTFS is jointly sponsored/owned by the Marine Corps and the Defense Finance and Accounting Service (DFAS).

<sup>12</sup> MCTFS uses a centralized strategy and management style with decentralized execution at the lowest reporting level. Input MCTFS transactions are generated from a variety of net-centric ancillary applications that include standalone, client/server, and Web-based systems.

<sup>13</sup> The Operational Data Store Enterprise (ODSE) is a relational database of all data elements that are stored within MCTFS. Capturing the data within MCTFS in a relational improves accessibility to users, reduces costs (accessing mainframe data can cost in excess of \$100/hr), and facilitates data presentation through associated manpower related applications/systems (e.g. systems can access MCTFS data via network connectivity and communication using standard query language (SQL) commands). MCTFS information is also historically achieved in a relational database called the Total Force Data Warehouse. This information dates back only to 1987 and includes end of month monthly records of specific MCTFS tables

<sup>14</sup> In 2007, MCTFS demonstrated that it paid all active duty and reserve Marines on time with 99.96 percent and 99.43 percent pay accuracy, respectively.

<sup>15</sup> The Marine Corps Total Force System (MCTFS) continuously records, processes, and maintains personnel and pay data for all active, reserve, and retired personnel. MCTFS is an integrated personnel and pay system, utilizing Unit Diary/Marine Integrated Personnel System (UP/MIPS), On-Line Diary System (OLDS) and Marine - Online (MOL) as the major input tools to update information contained within the database. The data is also available via an Oracle database that contains a snapshot of the mainframe data that users access through either MOL or the Operational Data Store Enterprise (ODSE). With numerous systems that interface the database, MCTFS is the only totally integrated personnel and pay system within the Department of Defense.

<sup>16</sup> For each operation, a crisis code is created to delineate which Marines are supporting which operations. For example, as crisis code of '9GF' signifies support of the OPERATIONS NOBLE EAGLE, ENDURING FREEDOM

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and IRAQI FREEDOM. OPERATION JOINT ENDEVOR (Bosnia operations) had a corresponding crisis code of 9EV.

<sup>17</sup> Other fields in MCTFS can be used to approximate the duration of a combat deployment. Combat tax zone exclusion and imminent danger pay are among the most prominent alternative methods to determine the length of a deployment. However, these fields do not provide the fidelity necessary for calculating combat deployments primarily because they are once a month type transactions that apply to both permanently stationed personnel and forward deployed personnel.

<sup>18</sup> (Conway 2007)

<sup>19</sup> Headquarters, United States Marine Corps. "MARADMIN 448/07 Post-Deployment Mobilization respite Absence (PDMRA)." United States Marine Corps. July 27, 2007.

<http://www.usmc.mil/maradmins/maradmin2000.nsf/37f49138fc3d9c00852569b9000af6b7/b5100d203aefb5808525732500431155?OpenDocument> (accessed January 24, 2008).

<sup>20</sup> The Marine Corps has historically reenlisted approximately 25 percent of the first term force, but will be required to reenlist over 30 percent in Fiscal Year 2007; Fiscal Years 2008 to 2011 will present an even greater challenge as the Marine Corps grows to 202,000. LtGen Ronald Coleman

<sup>21</sup> Beck, Joe. "Military Officials: Iraq Not Affecting Desertion Rates." North County Times. September 23, 2006. <http://www.nctimes.com/articles/2006/09/23/front/#inland> (accessed January 23, 2008).

<sup>22</sup> There are two types of FSA: type I and type II. Both types are payable in addition to any other allowance or per diem to which a member may be entitled. A member may qualify for both types for the same period. When most people think of "Family Separation Allowance," they are thinking of Type II. This is payable when a military member is forced to be separated from his/her dependents for longer than 30 days, and is a set amount of payment each month. Type I, on the other hand is payable when a military member is forced to be separated from his/her dependents, and must live off-base.

<sup>23</sup> Overseas accompanied orders usually entail a 3-4 tour length

<sup>24</sup> DEPTempo time may be accrued if the Marine is Deployed during the PCS move. Example: a Marine on 1 year unaccompanied orders to Okinawa Japan is deployed to Afghanistan for 6 months. The marine will accrue seven months of DEPTempo time

## DEPTempo HISTORY OF TODAY'S ACTIVE DUTY MARINES

### Current Parameters

Profile  
03xx's

### Current Results

Marines 1:1 Ratio (1-181 Days)  
3,675

Marines 1:2 Ratio (182-242 Days)  
8,301

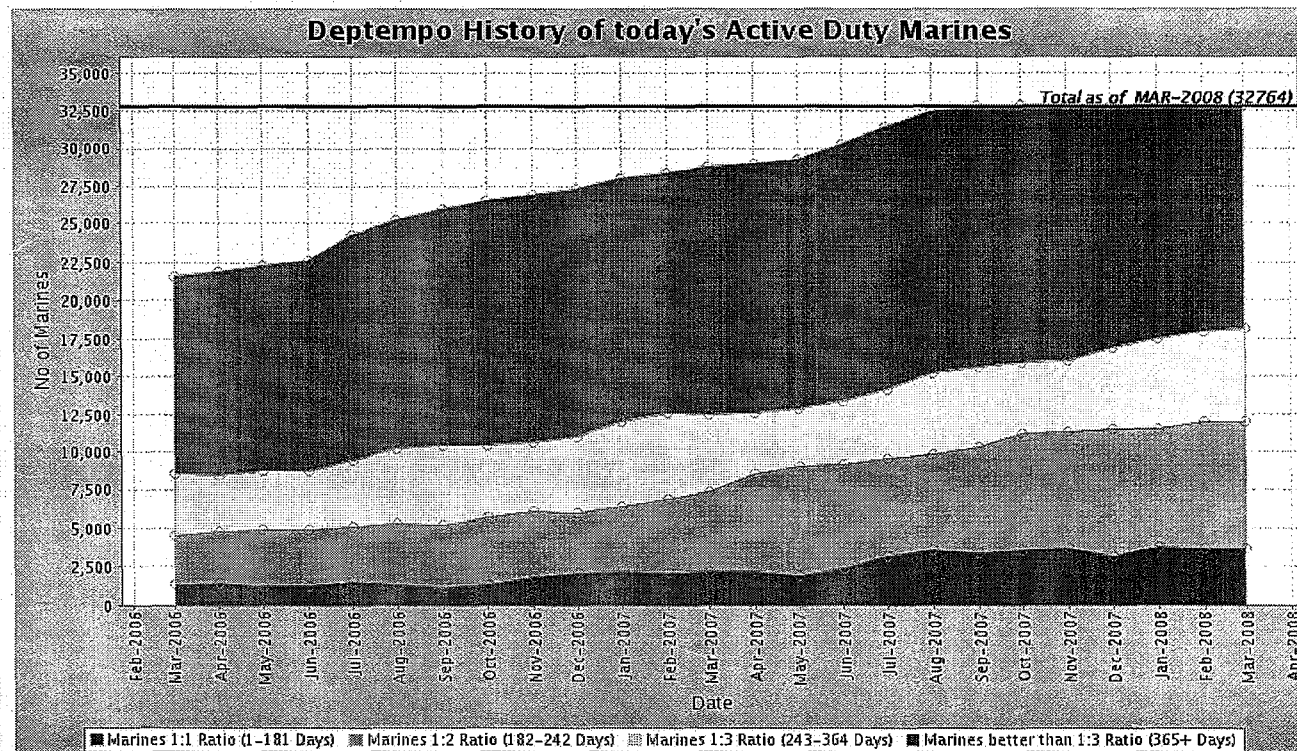
Marines 1:3 Ratio (243-364 Days)  
6,192

Marines better than 1:3 Ratio (365+ Days)  
14,596

### Profiles + (Create New)

Select Profile  
03xx's  
3d MAW Select Units  
72XX CoGrade  
All 02XX

Submit



Source: Manpower and Reserve Affairs, HQMC

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